

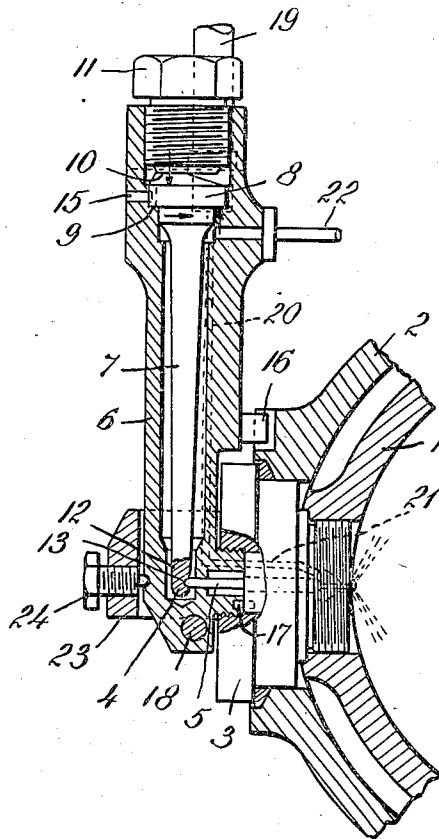
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FUEL VALVE FOR INTERNAL COMBUSTION ENGINES

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FUEL VALVE FOR INTERNAL COMBUSTION
ENGINESCurt Retschy, Winterthur, Switzerland, assignor
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3 Claims. (Cl. 267—1)

This invention relates to a fuel valve for internal combustion engines of the type having a bar spring, one end of which is mounted in and secured to a housing, the opposite or flexible end being in pressed engagement with the valve tappet. In the improved valve of the invention the bar has a shoulder arranged crosswise to the longitudinal axis of the bar on the secured or fixed end thereof, and the housing has a seat against which the shoulder makes contact. The tappet of the valve is arranged crosswise to the bar spring and the contact surface of the seat is preferably parallel to the axis of the tappet. The valve has means for pressing the shoulder against the bar. In a preferred construction the bar has an eccentric projection or bearing surface on its fixed end against which a screw in the housing makes pressed engagement, thereby forcing the shoulder against the seat.

The mounting of the bar in the housing makes it possible to prevent longitudinal displacement of the bar and resulting jamming of the tappet, on insertion of the bar, and the eccentric application of pressure by the screw on the bearing surface of the fixed end of the bar increases the lever arm of the moment of the force acting against the spring bearing moment.

The single figure of the accompanying drawing illustrates an embodiment of a valve construction in accordance with the invention in which certain parts are shown in section.

As illustrated in the drawing, portions of the cylinder 1 and the cylinder jacket 2 of the opposed piston engine are shown having suitable openings therein for a valve mounting-member 3 in which is secured a needle valve 4 actuated by a tappet 5. A housing 6 is attached to the valve and has a bar spring 7 mounted therein extending crosswise to the axis of the tappet. The fixed end of the bar spring has a flat shoulder 8 constructed crosswise to its longitudinal axis. The housing is formed to provide a flat seat 9 against which the shoulder of the spring is pressed. The extreme end of the spring bar has a bearing surface 10 eccentric with respect to the contact surface of the shoulder and a screw 11 is threaded into the end of the housing and adapted to apply pressure against the eccentric bearing surface. The flexible end 12 of the bar has a socket 13 formed at the under end-portion which is adapted to make contact with and center the upper end of the tappet 5.

The fuel which is introduced through the pipe 19, 20, is forced out through the ducts of the fuel injection device 6, 21. In the fuel valve 3 a groove 17 is arranged, which holds the valve securely. Above the valve housing a yoke 23 is arranged, which is secured by a screw device 24. In order to hold the spring 7, a groove 15 can be provided. Any oil leaking out is led away through the piping 22. In addition, for securing and fixing the valve 6 and for securing the stop pin 18 for the yoke 23 a groove 16 can be provided.

The valve construction of the invention is relatively low, that is, it does not extend away from the cylinder jacket any appreciable distance and may be dismantled or assembled in a relatively small space. The mounting arrangement at the fixed end of the bar, whereby the flat shoulder is forced against the seat, prevents a lateral displacement and jamming of the valve tappet when the rod is inserted, and the application of force eccentrically with respect to the contact surface of the shoulder increases the lever arm of the moment of force acting against the spring bending moment.

I claim:

1. In a fuel valve for internal combustion engines of the type having a bar spring one end of which is secured or fixed in a housing and the other end in engagement with a tappet of the valve the axis of which extends crosswise to the axis of the bar spring, the improvement which comprises a shoulder on the fixed end of the bar spring forming a contact surface which is crosswise to the longitudinal axis of the bar spring, said housing having a seat the bearing surface of which is substantially parallel to the axis of the valve tappet, and means for forcing the contact surface of the shoulder into pressed engagement with the seat.

2. A fuel valve according to claim 1 in which the bar spring has a bearing surface against which the force is applied which is eccentric to the contact surface of the shoulder.

3. A fuel valve according to claim 1 in which the bar spring has a bearing surface which is eccentric to the contact surface of the shoulder, and a screw in the housing adapted to engage the bearing surface, thereby applying the force pressing the shoulder into engagement with the seat.

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